



2025

All programming and artificial intelligence  
assessments for the first year of secondary  
school

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*First term*

**Put a checkmark (✓) next to the correct statement and an X (✗) next to the incorrect statement:**

1. Data is raw facts represented by numbers, letters, or symbols. ( )
2. One characteristic of information is that it disappears completely after being published on the internet. ( )
3. Secondary information is obtained from a third party, such as books and newspapers. ( )
4. Examples of media of expression include: texts, images, and video. ( )
5. Media literacy means the ability to accurately interpret information from media. ( )
6. Respecting copyright and privacy is an aspect of information ethics. ( )
7. Internet addiction and using a phone while walking are problems associated with smartphones. ( )
8. Sensitive personal data includes: race, religion, and health status. ( )
- 9 Privacy policies in companies aim to clarify how customer data is collected and protected. ( )
10. Intellectual property rights are divided into industrial property rights and copyright rights.
11. The principle of registration means that copyright is only established after the work is officially registered.
12. Industrial property rights include: patents and trademarks. ( )
13. Copyright is established at the moment the work is created and does not require registration. ( )
14. One of the essential elements of information security is confidentiality, integrity, and availability. ( )

15. Ransomware is used to protect data and prevent loss. ( )

16. A password is a string of characters used to verify that a user is legitimate. ( )

17. It is preferable for the password to be short so that it is easy to remember. ( )

18. Biometric authentication relies on characteristics such as fingerprints and irises. ( )

19. In two-factor authentication, two different types of factors are used for Verification ( )

20. A bit can represent more than two states at the same time. ( )

21. 1 byte equals 8 bits and can represent 256 different probabilities. ( )

22. The hexadecimal system uses numbers from 0 to 9 and letters from A to F. ( )

23. When converting from binary to hexadecimal, the binary number is divided into groups of 8 bits. ( )

24. ASCII code supports all languages, including Arabic. ( )

25. Unicode standard was designed to collect character symbols from different world languages into one system. ( )

26. Encoding is the process of converting digital data into readable characters. ( )

27. Font is the shape data of characters corresponding to character symbols. ( )

28. A character code is a unique numerical value assigned to each character or symbol. ( )

29. The ASCII system supports all the world's languages, including Arabic. ( )

30. The Unicode standard aims to unify the representation of all characters in the world's languages ( )

31. Encoding is the process of converting numbers into readable characters. ( )

32-When adding two binary digits  $(1 + 1)_{(2)}$  the result is  $(10)_{(2)}$  in the binary system. ( )

33. In binary subtraction, borrowing is done from the higher digit when the current value is not sufficient for subtraction. ( )

### **Choose the correct answer:**

1. Which of the following represents "information"?

- A) Raw facts.                      B) Something that has meaning or value for the recipient.  
C) Unintelligible symbols.                      D) Numbers only.

2. Knowledge means:

- A) Copying information.  
B) Analyzing and organizing information to solve problems.  
C) Raw data.                      D) Rumors.

3. Which of the following is considered a source of primary information?

- A) A textbook.                      B) A personal experience report.  
C) A daily newspaper

4. Media of transmission or broadcasting include:

- A) DVDs.                      B) Television. And radio.  
C) Texts and images.                      D) Cloud storage.

5. Which of the following is a violation of information ethics?

- A) Verifying sources.



B) Publishing copyrighted images without permission.

C) Respecting privacy.

D) Not cyberbullying.

6. Which of the following is considered identity theft?

A) Sharing a video.

B) Impersonating someone else to steal accounts.

C) Using a phone while walking.

D) Spreading rumors.

7. Which of the data Which of the following is considered basic data?

A) National ID number.

B) Iris scan.

C) Date of birth.

D) Health status.

8. Which of the following rights protects the economic interests of celebrities?

A) Right to privacy.

B) Image rights.

C) Publicity rights.

D) Copyright.

9. The license that companies obtain from the regulatory body to ensure their compliance with data protection is called:

A) Objection system.

B) Privacy policy.

C) Personal data protection center license.

D) Prior consent system.

10. The patent protection period is:

A) 7 years

B) 10 years

C) 20 years

D) 50 years

11. Which of the following is considered a neighboring right to copyright?

A) Design rights

B) Performers' rights, such as singers and actors

C) Trademark rights

D) Utility model rights

12. Which Creative Commons license allows the use of the work provided the author's name is mentioned?

A) (NC) (Non-commercial)                      D) (No derivatives)

C) (BY) (Attribution to the creator)

D) (SA) (Same conditions) For modifications

**13. Which type of malware replicates itself and spreads across the internet?**

A) Trojan horse                      B) Worm                      C) Spyware                      D) Ransomware

**14. Which cybercrime relies on using someone else's username or password?**

A) Network crimes                      B) Violation of unauthorized access laws

C) Manipulation of stored data                      D) Telephone fraud

**15 The purpose of copyright is to:**

A) Ensure fair use and protect rights.                      B) Prevent all forms of quotation.

C) Allow infringement of intellectual property rights. Intellectual property.

d) Use of the works for commercial purposes only.

**16. One-Time Password (OTP) means:**

a) A password that never changes.

b) A password that can be used multiple times.

c) A password that changes periodically and is used only once.

d) A password based on the date of birth.

**17. Which of the following is an example of knowledge-based authentication?**

a) Fingerprint.    b) Smart card.    c) Password and PIN.    d) SMS verification.

**18. Two-step authentication relies on:**

a) Two different types of factors.

b) Two pieces of information of the same type of factor.

c) Fingerprint + password.

d) SMS code + smart card.

19. The number of possible probabilities to represent 3 bits is:

- a) 2                      b) 4                      c) 8                      d) 16

20. The basic unit of information is:

- a) 1 megabyte    b) 1 kilobyte                      c) 1 byte                      d) 1 bit

21. When converting the binary number 1011(2) to decimal, the result is:

- a) 10                      b) 11                      c) 12                      d) 13

22. The binary number 10011010(2) is equivalent to which in the hexadecimal system:

- a) 9A(16)                      b) A9(16)                      c) 19(16)                      d) 91(16)

23. When converting the hexadecimal number A4(16) to binary, the result is:

- a) 10011010(2)                      b) 10100100(2)                      c) 11001001(2)                      d) 11100011(2)

24. Which of the following is an example of digital character encoding?

- a) ASCII                      b) Sans-serif                      c) Semi-cursive                      d) Font

25. One of the causes of character corruption is:

- a) Weak processor speed.  
decoding methods.                      b) Mismatch between encoding and  
c) Low storage capacity.                      d) Different font types.

26. Which of the following elements are necessary to display characters on a computer screen?

- a) Font only.                      b) Encoding only.  
c) Encoding + Font.                      d) Hexadecimal system.

27. The letter "H" in the string "Hello" is represented in the hexadecimal system by the symbol:

- a) 6C                      b) 65                      c) 48                      d) 6F

28. The letter "H" in the string "Hello" is represented in the hexadecimal system by the symbol:

- a) 65                      b) 48                      c) 6C                      d) 6F 4)

29. Which of the following is not a character encoding system?

- a) ASCII                      b) Unicode                      c) UTF-8                      d) BIOS

30. Which of the following causes character corruption?

- a) A mismatch between the encoding and decoding systems.  
b) Weak processor speed.  
c) Different font types.                      d) Lack of random access memory (RAM).

31. In binary addition, the result of  $1(2) + 1(2)$  is:

- a) 0 with a carry of 1                      b) 10 (2)                      c) 2 (2)                      d) 11 (2)

32. The result of the binary subtraction  $1010_{(2)} - 0110_{(2)}$  is:

- a)  $0010_{(2)}$                       b)  $0100_{(2)}$                       c)  $0110_{(2)}$                       d)  $1000_{(2)}$

33. To display characters on a computer screen, we need:

- a) Font only                      . b) Encoding only.                      c) Encoding + Font together.  
d) Hexadecimal system only.

34. What is the relationship between the 9's Complement and the 10's Complement?

- a. The 10's Complement is the 9's Complement minus 1.  
b. The 10's Complement is the 9's Complement plus 1.  
c. The 10's Complement is the 9's Complement multiplied by 10.  
d. The 10's Complement is the 9's Complement divided by 10.

35. What is the One's Complement of the binary number 0101?

- a. 0101 (2)                      b. 1011 (2)                      c. 1010(2)                      d. 0110 (2)



36. In the method of subtraction using complements, which operation does a computer use instead of subtraction?

- a. Multiplication                      b. Division                      c. Addition                      d. Subtraction

37. To calculate the 10's complement of the number 29, you first find its 9's complement, which is 70. What is the 10's Complement?

- a. 70                      b. 71                      c. 69                      d. 80

38. To calculate the 9's Complement of a decimal number, you subtract each digit from:

- a. 10                      b. 9                      c. 5                      d. 2

39. How do you get the Two's Complement from the One's Complement?

- a. By flipping the bits again.  
b. By subtracting(2) 1 from the One's Complement.  
c. By adding(2) 1 to the One's Complement.  
d. By ignoring the leading digit.

40. When subtracting using complements, what should you do with the final carry digit?

- a. Add it to the next digit.                      b. Multiply it by two.  
c. Leave it as it is.                      d. Ignore it.

41. Based on the example in the file, what is the Two's Complement of the binary number 0101(2)?

- a. 1010(2)                      b. 1011(2)                      c. 0101(2)                      d. 0001(2)

42. What is the 9's Complement of the number 635?

- a. 635                      b. 365                      c. 463                      d. 364

43. In the binary system, what do you do to each bit to find the One's Complement?

- a. Multiply it by 2.                      b. Subtract it from 10.

c. Invert it (flip it) from 0 to 1 and 1 to 0.

d. Add 1 to it.

44. In subtraction using complements, you must first find the complement of the: a. Subtracted from. b. Subtrahend c. Final result. d. Leading digit.

45. In the decimal subtraction  $8 - 6$  using complements, you add 8 to the 10's complement of 6 (which is 4). What is the result of this addition before you ignore the carry digit?

- a. 2                      b. 4                      c. 12                      d. 8

46. In the image digitization process, what is the unit, expressed in (dpi), that determines the image's resolution and clarity during sampling?

- a. Encoding      b. Quantization      c. Resolution      d. The Pixel

47. In usability techniques, what is the experience or emotional effect users get from interacting with a product or service?

- a. User Interface (UI)                                      b. Graphical User Interface (GUI)  
c. User Experience (UX)                                      d. Affordance

48. What is the main disadvantage of the Bitmap format compared to the Vector format

- a. It reduces the number of pixels in the image.  
b. It only allows for representing text and shapes  
c. It causes symbols to appear unreadable when printed.  
d. Jaggies appear when the image is enlarged.

49. According to the LATCH principle, which type of classification is based on the sequence of events over time?

- a. Location                      b. Alphabet                      c. Time                      d. Category

50. What is the term that refers to visually representing data to make it more understandable, with examples including tables, charts, etc.?

- a. Abstraction                      b. Pictogram                      c. Structuring                      d. Visualization

51. In the 24-bit full color system, what is the number of color levels that can be represented for a single primary color (like Red)?

- a. 8                      b. 24 levels                      c. 256 levels                      d. 224 levels

52. What is the concept that refers to how easily data and services can be accessed by a wide range of people, including those with special needs?

- a. Affordance                      b. Usability  
c. Accessibility                      d. Universal design

53. What are the three primary colors of light which, when mixed, increase in brightness and approach white?

- a. Cyan, Magenta, and Yellow                      b. Red, Green, and Blue  
c. Violet, Yellow, and Black                      d. White, Gray, and Black Third test

54. The smallest unit that defines the shape of a digital image, where the image is represented by its arrangement, is

- a. Resolution unit (dpi)                      b. The Pixel  
c. Sampling                      d. Encoding

55. What is the interface where icons and buttons are used in an easy-to-understand way to exchange information between humans and devices?

- a. Command Line Interface (CUI)                      b. User Interface (UI)  
c. Graphical User Interface (GUI)                      d. User Experience (UX)

56. If the image size in pixels is X pixels (vertical)  $\times$  Y pixels (horizontal), and each pixel is represented by Z bits, what is the correct equation that represents the data size (in bits)?

- a)  $X \times Y$                       b)  $X \times Y \times Z$                       c)  $Z + (X \times Y)$   
d)  $X \times Y \times \{\text{Number of primary colors}\}$

**57. According to the LATCH principle, which type of classification is based on the differences between things and is used as an axis to distinguish domains?**

- a. Location                      b. Alphabet                      c. Time                      d. Category

**58. A computer consists of five main components, which are**

- a) Control Unit, Arithmetic Unit, Memory Unit, Input Unit, Output Unit.  
b) Screen, Mouse, Printer, Keyboard, Storage Unit.  
c) Processor, Motherboard, Battery, Hard Drive, Screen.  
d) Input Unit, Output Unit, Network Unit, Cooling Unit, Arithmetic Unit.

**59. Examples of input units:**

- a) Screen and Printer.                      b) Keyboard and Scanner.  
c) Hard Drive and SSD.                      d) Speakers and Wireless Mouse.

**60. The connection standard that transmits audio and video over a single cable is:** a) USB                      b) HDMI                      c) Ethernet                      d) VGA

**61. The relationship between the five computer components depends on:**

- a) Data flow and control flow between the units.  
b) Only the speed of the hard drive.  
c) Screen size and display resolution.  
d) The type of operating system used.

**62. The Control Unit and the Arithmetic Unit are known together as**

- a) Input Unit.                      b) Memory Unit.  
c) Central Processing Unit (CPU).                      d) Storage Unit.

**63. Examples of input units:**

- a) Screen and Printer.                      b) Keyboard and Scanner.



c) Hard Drive and SSD.

d) Speakers and Wireless Mouse.

**64. The standard used to connect computers within Local Area Networks (LAN) is:** a) HDMI. b) Bluetooth. c) Ethernet. d) USB.

**65. USB is typically used to connect:**

- a) Network devices only.
- b) Peripheral devices such as printers and keyboards.
- c) Internal storage units.
- d) Audio systems only.

**66. The function of the Control Unit is:**

- a) Executing instructions and issuing commands to the other units.
- b) Storing data temporarily.
- c) Processing data only.
- d) Outputting the final information

**67. Secondary memory is used for:**

- a) Storing data temporarily.
- b) Executing instructions quickly.
- c) Long-term storage of data and programs.
- d) Controlling data flow.

**68. Programs and data are stored temporarily in:**

- a) Main memory.
- b) Secondary memory.
- c) Arithmetic Unit.
- d) Input Unit.

**69. What is meant by an "Interface"?**

- a) A program that manages hardware.
- b) A component that mediates information exchange between the computer and peripheral devices.
- c) An internal storage unit.
- d) The operating system for peripheral devices.

**70. Which of the following is considered a hardware component?**

- a) Operating System
- b) Internet Browser
- c) Excel Application
- d) Central Processing Unit (CPU)

**71. What is meant by Software?**

- a) The hardware devices of the computer
- b) The programs and data that run on the hardware
- c) Only the computer's memory
- d) The network components

**72. Which of the following is considered system software?**

- a) Operating System
- b) Excel program
- c) PowerPoint program
- d) Browser application

**73. What is the function of the operating system?**

- a) Increase internet speed
- b) Control hardware functions and run programs
- c) Only save files
- d) Temporarily shut down the computer

**74. Which of the following is an example of hardware?**

- a) Mouse
- b) Word program
- c) Operating System
- d) Messaging application

**75. What does the term "Hardware" refer to?**

- a) Software
- b) Digital data
- c) The hardware devices of the computer
- d) Programing instructions

**76. System software is used to:**

- a) Operate and manage hardware
- b) Create documents
- c) Play video clips
- d) Browse the internet

**77. Which of the following is not system software?**

- a) Windows
- b) macOS
- c) Photoshop
- d) Linux

**78. What is the relationship between hardware and software?**

- a) Hardware runs without software
- b) Software runs on hardware to operate the computer
- c) There is no relationship between them
- d) Hardware is a part of software

**79. Which of the following is considered application software?**

- a) Word
- b) Windows
- c) BIOS
- d) Linux

**80. What controls the communication between hardware and software?**

- a) The Operating System
- b) The user
- c) The input unit
- d) The screen

**81. What is meant by "System Software"?**

- a) Programs used directly by the user
- b) Programs that control the operation of hardware and other programs
- c) Programs for designing images
- d) Programs for browsing the web

**82. What is meant by a Logical Operation?**

- a. A calculation using decimal numbers

- b. An operation performed using binary numbers 0 and 1
- c. A graphical process for drawing circuits
- d. A process of storing data in memory

83. A Logic Circuit is used for:

- a. Converting signals into images
- b. Executing logical operations
- c. Storing data
- d. Sending data over the internet

84. Which of the following gates outputs (1) only when all inputs are (1)?

- a. OR
- b. AND
- c. NOT
- d. XOR

85. Which of the following describes the Inverter (NOT) circuit?

- a. It outputs the same value as the input
- b. It outputs the opposite of the input value
- c. It outputs the sum of the inputs
- d. It does not output any value

86. Which of the following describes the function of an OR gate?

- a. It outputs 1 only when all inputs are 1
- b. It outputs 1 if at least one input is 1
- c. It always outputs 0
- d. It outputs 1

87. when the inputs are equal 2. A Truth Table is used for:

- a. Storing data
- b. Showing the outputs for all possible input combinations
- c. Drawing circuits
- d. Translating programs

88. What is the output of an AND gate if the inputs are (1 and 0)?



a. 0                      b. 1                      c. 2                      d. Nothing

**89. What is the function of a Half Adder circuit?**

- a. Adding two decimal numbers                      b. Adding two single-bit binary numbers
- c. Subtracting two numbers                      d. Converting one number to another

**90. A Half Adder circuit consists of:**

- a. An AND gate and an OR gate                      b. An AND gate and a NOT gate
- c. An AND gate and an XOR gate                      d. An OR gate and a NOT gate

**91. What is the difference between a Half Adder and a Full Adder?**

- a. The Full Adder accounts for the Carry-in
- b. The Half Adder is faster at calculation
- c. The Full Adder uses only one input
- d. The Half Adder only works for logical operations

**92. In a Full Adder circuit, the number of inputs is:**

- a. 2                      b. 3                      c. 4                      d. 1 4.

**93- Which of the following is NOT a component of a Full Adder circuit?**

- a. AND                      b. OR                      c. XOR                      d. NAND

**94. What is the output of a NOT circuit if the input = 1?**

- a. 0                      b. 1                      c. 2                      d. Nothing

**95 In the truth table for an OR gate, when the inputs are (0 and 0), the output is:**

- a. 0                      b. 1                      c. Depends on the gate                      d. Undefined

**96. What is the logical symbol for an AND gate**

- a. V                      b.  $\wedge$                       c.  $\neg$                       d. +

**97. In a Full Adder circuit, the symbol C refers to:**

- a. Carry                      b. Sum                      c. A third input                      d. Power line

**98. The function of a truth table is to:**

- a. Show all possible input and output combinations  
b. Save programming commands  
c. Analyze images                      d. Display only binary values

**99. The circuit that outputs the opposite of the input is called:**

- a. OR                      b. NOT                      c. AND                      d. XOR

**100. A Full Adder circuit handles:**

- a. Only one bit                      b. Two bits and three inputs  
c. Two bits and only two inputs                      d. Four inputs

**1-1. When adding 1 and 1 in the binary system, the result is:**

- a. 0                      b. 1                      c. 10                      d. 11

**102. The function of a Half Adder circuit is to calculate:**

- a. The Sum only                      b. Both the Sum and the Carry  
c. Subtraction                      d. Division

**103. The logic circuit that outputs 1 only when the inputs are different is called:**

- a. XOR                      b. OR                      c. AND                      d. NOR

**104. Which of the following describes a Full Adder?**

- a. It includes only two inputs  
b. It includes 3 inputs and produces two outputs (Sum and Carry)  
c. It produces only one output                      d. It does not contain an XOR gate

**105. In logic circuits, the value (1) means:**

- a. False                      b. True                      c. Null                      d. Off

**106. Knowledge means:**

- A) Copying information.
- B) Analyzing and organizing information to solve problems.
- C) Raw data.
- D) Rumors.

**107. Which of the following malware replicates itself and spreads across the internet?**

- A) Trojan Horse
- B) Worm
- C) Spyware
- D) Ransomware

**108. The basic unit of information is:**

- A) 1 Megabyte
- B) 1 Kilobyte
- C) 1 Byte
- D) 1 Bit

**109. Which of the following is considered a violation of information ethics?**

- A) Verifying sources.
- B) Publishing copyrighted images without permission.
- C) Respecting privacy.
- D) Avoiding cyberbullying.

**110. The duration of protection for patents is:**

- A) 7 years
- B) 10 years
- C) 20 years
- D) 50 years

**111. The number of possible combinations to represent 3 bits is:**

- A) 2
- B) 4
- C) 8
- D) 16

**112. Which of the following rights protects the economic interests of celebrities?**

- A) Right to privacy.
- B) Image rights.
- C) Right of publicity (or Publicity Rights).
- D) Copyrights.

**113. Which of the following cybercrimes relies on using another person's username or password?**

- A) Network crimes.
- B) Violation of the unauthorized access law.

C) Manipulation of stored data.

D) Phone fraud.

**114. Which of the following is an example of knowledge-based authentication?**

A) Fingerprint.

B) Smart card.

C) Password and PIN code.

D) SMS verification.

**115. Which of the following is an example of digital character encoding?**

A) ASCII

B) Sans-serif

C) Semi-cursive

D) Font

**116. The hexadecimal code for the character "H" in the string "Hello" is:**

A) 65

B) 48

C) 6C

D) 6F

**117. What is the ten's complement of the number 635 in the decimal system?**

A) 365

B) 365

C) 375

D) 39

**118. Which of the following elements is essential for displaying characters on a computer screen?**

A) Font only.

B) Encoding only.

C) Encoding + Font.

D) Hexadecimal system.

**119. Which of the following causes character corruption?**

A) Mismatch between encoding and decoding systems.

B) Slow computer speed.

C) Different font types.

D) Low Random Access Memory (RAM).

**120. In computers, the subtraction operation is performed using:**

A) Addition using complements

B) Multiplication by the complement of the number

C) Conversion to the decimal system

D) Direct subtraction



121. The character "H" in the string "Hello" is represented in hexadecimal by the code:

- A) C6                      B) 65                      C) 48                      D) F6

122. To display characters on a computer screen, we need:

- A) Font only                      B) Encoding only  
C) Encoding and Font together    D) Hexadecimal encoding only

123. What is the ten's complement of the number 71 in the decimal system?

- A) 18                      B) 29                      C) 29                      D) 3



# EVALUATION ANSWERS



**Put a checkmark (✓) next to the correct statement and an X (✗) next to the incorrect statement:**

1. Data is raw facts represented by numbers, letters, or symbols. ( ✓ )
2. One characteristic of information is that it disappears completely after being published on the internet. ( ✗ )
3. Secondary information is obtained from a third party, such as books and newspapers. ( ✓ )
4. Examples of media of expression include: texts, images, and video. ( ✓ )
5. Media literacy means the ability to accurately interpret information from media. ( ✓ )
6. Respecting copyright and privacy is an aspect of information ethics. ( ✓ )
7. Internet addiction and using a phone while walking are problems associated with smartphones. ( ✓ )
8. Sensitive personal data includes: race, religion, and health status. ( ✓ )
9. Privacy policies in companies aim to clarify how customer data is collected and protected. ( ✓ )
10. Intellectual property rights are divided into industrial property rights and copyright rights. ( ✓ )
11. The principle of registration means that copyright is only established after the work is officially registered. ( ✗ )
12. Industrial property rights include: patents and trademarks. ( ✓ )
13. Copyright is established at the moment the work is created and does not require registration ( ✓ )
14. One of the essential elements of information security is confidentiality, integrity, and availability. ( ✓ )

15. Ransomware is used to protect data and prevent loss. ( X )
16. A password is a string of characters used to verify that a user is legitimate ( ✓ )
17. It is preferable for the password to be short so that it is easy to remember ( X )
18. Biometric authentication relies on characteristics such as fingerprints and irises. ( X )
19. In two-factor authentication, two different types of factors are used for Verification ( ✓ )
20. A bit can represent more than two states at the same time. ( X )
21. 1 byte equals 8 bits and can represent 256 different probabilities ( ✓ )
22. The hexadecimal system uses numbers from 0 to 9 and letters from A to F ( ✓ )
23. When converting from binary to hexadecimal, the binary number is divided into groups of 8 bits. ( X )
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29. The ASCII system supports all the world's languages, including Arabic ( X )
30. The Unicode standard aims to unify the representation of all characters in the world's languages ( ✓ )
31. Encoding is the process of converting numbers into readable characters. ( X )
32. When adding two binary digits  $(1 + 1)_{(2)}$  the result is  $(10)_{(2)}$  in the binary system. ( ✓ )
33. In binary subtraction, borrowing is done from the higher digit when the current value is not sufficient for subtraction. ( ✓ )

### Choose the correct answer:

1. Which of the following represents "information"?

- A) Raw facts.                      B) Something that has meaning or value for the recipient.
- C) Unintelligible symbols.                      D) Numbers only.

2. Knowledge means:

- A) Copying information.
- B) Analyzing and organizing information to solve problems.
- C) Raw data.                      D) Rumors.

3. Which of the following is considered a source of primary information?

- A) A textbook.                      B) A personal experience report.
- C) A daily newspaper.                      D) A television program.

4. Media of transmission or broadcasting include:

- A) DVDs.                      B) Television. And radio.

C) Texts and images.

D) Cloud storage.

5. Which of the following is a violation of information ethics?

A) Verifying sources.

**B) Publishing copyrighted images without permission.**

C) Respecting privacy.

D) Not cyberbullying.

6. Which of the following is considered identity theft?

A) Sharing a video.

**B) Impersonating someone else to steal accounts.**

C) Using a phone while walking.

D) Spreading rumo

7. Which of the data Which of the following is considered basic data?

A) National ID number.

B) Iris scan.

**C) Date of birth.**

D) Health status.

8. Which of the following rights protects the economic interests of celebrities?

A) Right to privacy.

B) Image rights.

**C) Publicity rights.**

D) Copyright.

9. The license that companies obtain from the regulatory body to ensure their compliance with data protection is called:

A) Objection system.

B) Privacy policy.

**C) Personal data protection center license.**

D) Prior consent system.

10. The patent protection period is:

A) 7 years

B) 10 years

**C) 20 years**

D) 50 years

11. Which of the following is considered a neighboring right to copyright?

A) Design rights

**B) Performers' rights, such as singers and actors**

C) Trademark rights

D) Utility model rights

12. Which Creative Commons license allows the use of the work provided the author's name is mentioned?

A) (NC) (Non-commercial)

B) (ND) (No derivatives)

C) (BY) (Attribution to the creator)

D) (SA) (Same conditions) For modifications

13. Which type of malware replicates itself and spreads across the internet?

A) Trojan horse

B) Worm

C) Spyware

D) Ransomware

14. Which cybercrime relies on using someone else's username or password?

A) Network crimes

B) Violation of unauthorized access laws

C) Manipulation of stored data

D) Telephone fraud

15. The purpose of copyright is to:

A) Ensure fair use and protect rights.

B) Prevent all forms of quotation.

C) Allow infringement of intellectual property rights. Intellectual property.

d) Use of the works for commercial purposes only.

16. One-Time Password (OTP) means:

a) A password that never changes.

b) A password that can be used multiple times.

c) A password that changes periodically and is used only once.

d) A password based on the date of birth.

17. Which of the following is an example of knowledge-based authentication? a) Fingerprint. b) Smart card. c) Password and PIN. d) SMS verification.

18. Two-step authentication relies on:

a) Two different types of factors.

b) Two pieces of information of the same type of factor.

c) Fingerprint + password.

d) SMS code + smart card.

19. The number of possible probabilities to represent 3 bits is:

a) 2

b) 4

c) 8

d) 16

20. the basic unit of information is:

a) 1 megabyte

b) 1 kilobyte

c) 1 byte

d) 1 bit

21. When converting the binary number 1011(2) to decimal, the result is:

a) 10

b) 11

c) 12

d) 13

22. The binary number 10011010(2) is equivalent to which in the hexadecimal system:

a) 9A<sub>(16)</sub>

b) A9<sub>(16)</sub>

c) 19<sub>(16)</sub>

d) 91<sub>(16)</sub>

23. When converting the hexadecimal number A4(16) to binary, the result is:

a) 10011010<sub>(2)</sub>

b) 10100100<sub>(2)</sub>

c) 11001001<sub>(2)</sub>

d) 11100011<sub>(2)</sub>

24. Which of the following is an example of digital character encoding?

a) ASCII

b) Sans-serif

c) Semi-cursive

d) Font

25. One of the causes of character corruption is:

a) Weak processor speed.

b) Mismatch between encoding and decoding methods.

c) Low storage capacity.

d) Different font types.

26. Which of the following elements are necessary to display characters on a computer screen?

a) Font only.

b) Encoding only.

c) Encoding + Font.

d) Hexadecimal system.

27. The letter "H" in the string "Hello" is represented in the hexadecimal system by the symbol:



- a) 6C                      b) 65                      c) 48                      d) 6F

28. The letter "H" in the string "Hello" is represented in the hexadecimal system by the symbol:

- a) 65                      b) 48                      c) 6C                      d) 6F 4)

29. Which of the following is not a character encoding system?

- a) ASCII                      b) Unicode                      c) UTF-8                      d) BIOS

30. Which of the following causes character corruption?

- a) A mismatch between the encoding and decoding systems.  
b) Weak processor speed.  
c) Different font types.                      d) Lack of random access memory (RAM).

31. In binary addition, the result of  $1(2) + 1(2)$  is:

- a) 0 with a carry of 1                      b) 10 (2)                      c) 2 (2)                      d) 11 (2)

32. The result of the binary subtraction  $1010_{(2)} - 0110_{(2)}$  is:

- a) 0010<sub>(2)</sub>                      b) 0100<sub>(2)</sub>                      c) 0110<sub>(2)</sub>                      d) 1000<sub>(2)</sub>

33. To display characters on a computer screen, we need:

- a) Font only                      . b) Encoding only.                      c) Encoding + Font together.  
d) Hexadecimal system only.

34. What is the relationship between the 9's Complement and the 10's Complement?

- a. The 10's Complement is the 9's Complement minus 1.  
b. The 10's Complement is the 9's Complement plus 1.  
c. The 10's Complement is the 9's Complement multiplied by 10.  
d. The 10's Complement is the 9's Complement divided by 10.

35. What is the One's Complement of the binary number 0101?

- a. 0101 (2)                      b. 1011 (2)                      c. 1010(2)                      d. 0110 (2)

36. In the method of subtraction using complements, which operation does a computer use instead of subtraction?

- a. Multiplication                      b. Division                      c. Addition                      d. Subtraction

37. To calculate the 10's complement of the number 29, you first find its 9's complement, which is 70. What is the 10's Complement?

- a. 70                      b. 71                      c. 69                      d. 80

38. To calculate the 9's Complement of a decimal number, you subtract each digit from:

- a. 10                      b. 9                      c. 5                      d. 2

39. How do you get the Two's Complement from the One's Complement?

- a. By flipping the bits again.  
b. By subtracting(2) 1 from the One's Complement.  
c. By adding(2) 1 to the One's Complement.  
d. By ignoring the leading digit.

40. When subtracting using complements, what should you do with the final carry digit?

- a. Add it to the next digit.                      b. Multiply it by two.  
c. Leave it as it is.                      d. Ignore it.

41. Based on the example in the file, what is the Two's Complement of the binary number 0101(2)?

- a. 1010(2)                      b. 1011(2)                      c. 0101(2)                      d. 0001(2)

42. What is the 9's Complement of the number 635?

- a. 635                      b. 365                      c. 463                      d. 364

43. In the binary system, what do you do to each bit to find the One's Complement?

- a. Multiply it by 2.
- b. Subtract it from 10.
- c. Invert it (flip it) from 0 to 1 and 1 to 0.
- d. Add 1 to it.

44. In subtraction using complements, you must first find the complement of the:

- a. Subtracted from.
- b. Subtrahend
- c. Final result.
- d. Leading digit.

45. In the decimal subtraction  $8 - 6$  using complements, you add 8 to the 10's complement of 6 (which is 4). What is the result of this addition before you ignore the carry digit?

- a. 2
- b. 4
- c. 12
- d. 8

46.. In the image digitization process, what is the unit, expressed in (dpi), that determines the image's resolution and clarity during sampling?

- a. Encoding
- b. Quantization
- c. Resolution
- d. The Pixel

47. In usability techniques, what is the experience or emotional effect users get from interacting with a product or service?

- a. User Interface (UI)
- b. Graphical User Interface (GUI)
- c. User Experience (UX)
- d. Affordance

48.. What is the main disadvantage of the Bitmap format compared to the Vector format

- a. It reduces the number of pixels in the image.
- b. It only allows for representing text and shapes
- c. It causes symbols to appear unreadable when printed.
- d. Jaggies appear when the image is enlarged.

49. According to the LATCH principle, which type of classification is based on the sequence of events over time?

- a. Location
- b. Alphabet
- c. Time
- d. Category

50. What is the term that refers to visually representing data to make it more understandable, with examples including tables, charts, etc.?

- a. Abstraction                      b. Pictogram                      c. Structuring                      d. Visualization

51. In the 24-bit full color system, what is the number of color levels that can be represented for a single primary color (like Red)?

- a. 8                      b. 24 levels                      c. 256 levels                      d. 224 levels

52. What is the concept that refers to how easily data and services can be accessed by a wide range of people, including those with special needs?

- a. Affordance                      b. Usability                      c. Accessibility                      d. Universal design

53. What are the three primary colors of light which, when mixed, increase in brightness and approach white?

- a. Cyan, Magenta, and Yellow                      b. Red, Green, and Blue  
c. Violet, Yellow, and Black                      d. White, Gray, and Black

54. The smallest unit that defines the shape of a digital image, where the image is represented by its arrangement, is

- a. Resolution unit (dpi)                      b. The Pixel                      c. Sampling                      d. Encoding

55. What is the interface where icons and buttons are used in an easy-to-understand way to exchange information between humans and devices?

- a. Command Line Interface (CUI)                      b. User Interface (UI)  
c. Graphical User Interface (GUI)                      d. User Experience (UX)

55. If the image size in pixels is X pixels (vertical)  $\times$  Y pixels (horizontal), and each pixel is represented by Z bits, what is the correct equation that represents the data size (in bits)?

- a)  $X \times Y$                       b)  $X \times Y \times Z$                       c)  $Z + (X \times Y)$   
d)  $X \times Y \times \{\text{Number of primary colors}\}$



56. According to the LATCH principle, which type of classification is based on the differences between things and is used as an axis to distinguish domains?

- a. Location      b. Alphabet      c. Time      d. **Category**

57. A computer consists of five main components, which are

a) **Control Unit, Arithmetic Unit, Memory Unit, Input Unit, Output Unit.**

b) Screen, Mouse, Printer, Keyboard, Storage Unit.

c) Processor, Motherboard, Battery, Hard Drive, Screen.

d) Input Unit, Output Unit, Network Unit, Cooling Unit, Arithmetic Unit.

58. Examples of input units:

a) Screen and Printer.

b) **Keyboard and Scanner.**

c) Hard Drive and SSD.

d) Speakers and Wireless Mouse.

59. The connection standard that transmits audio and video over a single cable is: a) USB      b) **HDMI**      c) Ethernet      d) VGA

60. The relationship between the five computer components depends on:

a) **Data flow and control flow between the units.**

b) Only the speed of the hard drive.

c) Screen size and display resolution.

d) The type of operating system used.

61. The Control Unit and the Arithmetic Unit are known together as

a) Input Unit.

b) Memory Unit.

c) **Central Processing Unit (CPU).**

d) Storage Unit.

62. Examples of input units:

a) Screen and Printer.

b) **Keyboard and Scanner.**

c) Hard Drive and SSD.

d) Speakers and Wireless Mouse.

63. The standard used to connect computers within Local Area Networks (LAN) is: a) HDMI. b) Bluetooth. c) Ethernet. d) USB.

64. USB is typically used to connect:

a) Network devices only.

b) Peripheral devices such as printers and keyboards.

c) Internal storage units.

d) Audio systems only.

65. The function of the Control Unit is:

a) Executing instructions and issuing commands to the other units.

b) Storing data temporarily.

c) Processing data only.

d) Outputting the final information

66. Secondary memory is used for:

a) Storing data temporarily.

b) Executing instructions quickly.

c) Long-term storage of data and programs.

d) Controlling data flow.

67. Programs and data are stored temporarily in:

a) Main memory.

b) Secondary memory.

c) Arithmetic Unit.

d) Input Unit.

68. What is meant by an "Interface"?

a) A program that manages hardware.

b) A component that mediates information exchange between the computer and peripheral devices.

c) An internal storage unit.

d) The operating system for peripheral devices.

69. Which of the following is considered a hardware component?

- a) Operating System
- b) Internet Browser
- c) Excel Application
- d) Central Processing Unit (CPU)

70. What is meant by Software?

- a) The hardware devices of the computer
- b) The programs and data that run on the hardware
- c) Only the computer's memory
- d) The network components

71. Which of the following is considered system software?

- a) Operating System
- b) Excel program
- c) PowerPoint program
- d) Browser application

72. What is the function of the operating system?

- a) Increase internet speed
- b) Control hardware functions and run programs
- c) Only save files
- d) Temporarily shut down the computer

73. Which of the following is an example of hardware?

- a) Mouse
- b) Word program
- c) Operating System
- d) Messaging application

4. What does the term "Hardware" refer to?

- a) Software
- b) Digital data
- c) The hardware devices of the computer
- d) Programing instructions

75. System software is used to:

- a) **Operate and manage hardware**
- b) Create documents
- c) Play video clips
- d) Browse the internet

76. Which of the following is not system software?

- a) Windows
- b) macOS
- c) **Photoshop**
- d) Linux

77. What is the relationship between hardware and software?

- a) Hardware runs without software
- b) **Software runs on hardware to operate the computer**
- c) There is no relationship between them
- d) Hardware is a part of software

78. Which of the following is considered application software?

- a) **Word**
- b) Windows
- c) BIOS
- d) Linux

79. What controls the communication between hardware and software?

- a) **The Operating System**
- b) The user
- c) The input unit
- d) The screen

80. What is meant by "System Software"?

- a) Programs used directly by the user
- b) **Programs that control the operation of hardware and other programs**
- c) Programs for designing images
- d) Programs for browsing the web



81. What is meant by a Logical Operation?

- a. A calculation using decimal numbers
- b. An operation performed using binary numbers 0 and 1**
- c. A graphical process for drawing circuits
- d. A process of storing data in memory

82. A Logic Circuit is used for:

- a. Converting signals into images
- b. Executing logical operations**
- c. Storing data
- d. Sending data over the internet

83. Which of the following gates outputs (1) only when all inputs are (1)?

- a. OR
- b. AND**
- c. NOT
- d. XOR

84. Which of the following describes the Inverter (NOT) circuit?

- a. It outputs the same value as the input
- b. It outputs the opposite of the input value**
- c. It outputs the sum of the inputs
- d. It does not output any value

85. Which of the following describes the function of an OR gate?

- a. It outputs 1 only when all inputs are 1
- b. It outputs 1 if at least one input is 1**
- c. It always outputs 0
- d. It outputs 1

86. when the inputs are equal 2. A Truth Table is used for:

- a. Storing data
- b. Showing the outputs for all possible input combinations**
- c. Drawing circuits
- d. Translating programs

87. What is the output of an AND gate if the inputs are (1 and 0)?

a. 0      b. 1      c. 2      d. Nothing

88. What is the function of a Half Adder circuit?

- a. Adding two decimal numbers      b. Adding two single-bit binary numbers  
c. Subtracting two numbers      d. Converting one number to another

89. A Half Adder circuit consists of:

- a. An AND gate and an OR gate      b. An AND gate and a NOT gate  
c. An AND gate and an XOR gate      d. An OR gate and a NOT gate

90. What is the difference between a Half Adder and a Full Adder?

- a. The Full Adder accounts for the Carry-in  
b. The Half Adder is faster at calculation  
c. The Full Adder uses only one input  
d. The Half Adder only works for logical operations

91. In a Full Adder circuit, the number of inputs is:

- a. 2      b. 3      c. 4      d. 14.

92. Which of the following is NOT a component of a Full Adder circuit?

- a. AND      b. OR      c. XOR      d. NAND

93. What is the output of a NOT circuit if the input = 1?

- a. 0      b. 1      c. 2      d. Nothing

94. In the truth table for an OR gate, when the inputs are (0 and 0), the output is:

- a. 0      b. 1      c. Depends on the gate      d. Undefined

95. What is the logical symbol for an AND gate

- a. V      b.  $\wedge$       c.  $\neg$       d. +

96. In a Full Adder circuit, the symbol C refers to:

- a. Carry      b. Sum      c. A third input      d. Power line

97. The function of a truth table is to:

- a. Show all possible input and output combinations  
b. Save programming commands  
c. Analyze images      d. Display only binary values

98. The circuit that outputs the opposite of the input is called:

- a. OR      b. NOT      c. AND      d. XOR

99. A Full Adder circuit handles:

- a. Only one bit      b. Two bits and three inputs  
c. Two bits and only two inputs      d. Four inputs

100. When adding 1 and 1 in the binary system, the result is:

- a. 0      b. 1      c. 10      d. 11

101. The function of a Half Adder circuit is to calculate:

- a. The Sum only      b. Both the Sum and the Carry  
c. Subtraction      d. Division

102. The logic circuit that outputs 1 only when the inputs are different is called:

- a. XOR      b. OR      c. AND      d. NOR

103. Which of the following describes a Full Adder?

- a. It includes only two inputs  
b. It includes 3 inputs and produces two outputs (Sum and Carry)  
c. It produces only one output      d. It does not contain an XOR gate

104. In logic circuits, the value (1) means:

- a. False      b. True      c. Null      d. Off

105. Knowledge means:

- A) Copying information.
- B) Analyzing and organizing information to solve problems.**
- C) Raw data.
- D) Rumors.

106. Which of the following malware replicates itself and spreads across the internet?

- A) Trojan Horse
- B) Worm**
- C) Spyware
- D) Ransomware

107. The basic unit of information is:

- A) 1 Megabyte
- B) 1 Kilobyte
- C) 1 Byte
- D) 1 Bit**

108. Which of the following is considered a violation of information ethics?

- A) Verifying sources.
- B) Publishing copyrighted images without permission.**
- C) Respecting privacy.
- D) Avoiding cyberbullying.

109. The duration of protection for patents is:

- A) 7 years
- B) 10 years
- C) 20 years**
- D) 50 years

110. The number of possible combinations to represent 3 bits is:

- A) 2
- B) 4
- C) 8**
- D) 16

111. Which of the following rights protects the economic interests of celebrities?

- A) Right to privacy.
- B) Image rights.
- C) Right of publicity (or Publicity Rights).**
- D) Copyrights.

112. Which of the following cybercrimes relies on using another person's username or password?

- A) Network crimes.
- B) Violation of the unauthorized access law.**



C) Manipulation of stored data.

D) Phone fraud.

132. Which of the following is an example of knowledge-based authentication?

A) Fingerprint.

B) Smart card.

C) Password and PIN code.

D) SMS verification.

114. Which of the following is an example of digital character encoding?

A) ASCII

B) Sans-serif

C) Semi-cursive

D) Font

115. The hexadecimal code for the character "H" in the string "Hello" is:

A) 65

B) 48

C) 6C

D) 6F

116. What is the ten's complement of the number 635 in the decimal system?

A) 366

B) 365

C) 375

D) 395

117. Which of the following elements is essential for displaying characters on a computer screen?

A) Font only.

B) Encoding only.

C) Encoding + Font.

D) Hexadecimal system.

118. Which of the following causes character corruption?

A) Mismatch between encoding and decoding systems.

B) Slow computer speed.

C) Different font types.

D) Low Random Access Memory (RAM).

119. In computers, the subtraction operation is performed using:

A) Addition using complements

B) Multiplication by the complement of the number

C) Conversion to the decimal system

D) Direct subtraction

120. The character "H" in the string "Hello" is represented in hexadecimal by the code:

- A) C6                      B) 65                      C) 48                      D) F6

1 To display characters on a computer screen, we need:

- A) Font only                      B) Encoding only  
C) Encoding and Font together                      D) Hexadecimal encoding only

122. What is the ten's complement of the number 71 in the decimal system?

- A) 18                      B) 29                      C) 29                      D) 3